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SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL



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Pete Moffitt, Chairman
Fulton Love, Vice-Chairman

Robert K. Mahood, Executive Director
Gregg T. Waugh, Deputy Executive Director

May 24, 2000

Colonel Joe R. Miller
District Engineer, Jacksonville District
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Ref: Permit Application No. 199905545 (IP-DSG)

Dear Colonel Miller:

The South Atlantic Fishery Management Council (SAFMC) offers the following comments on the proposed beach renourishment project presented in permit application No. 199905545. These comments are based on a staff review of the proposal and the Council's approved habitat policies and Habitat Plan. In addition, these comments have been coordinated with our Habitat and Environmental Protection Advisory Panel.

The proposed beach renourishment project will impact areas identified as Essential Fish Habitat (EFH) in the 1998 Comprehensive Habitat Amendment to Fishery Management Plans (coral, coral reef and live bottom habitat, red drum, shrimp, spiny lobster, coastal migratory pelagic species, and the snapper-grouper complex) prepared by the South Atlantic Fishery Management Council (SAFMC); identified impacts include direct loss of 37.1 acres of nearshore live/hard bottom. This comprehensive amendment was prepared in accordance with provisions described in the 1996 reauthorization of the Magnuson-Stevens Fishery Conservation and Management Act, P.L. 104-297 (MSFCMA) and has been approved by the Secretary of Commerce. In addition, all of the nearshore hardbottom habitats proposed for burial, and offshore reefs adjacent to these large dredge excavations, were designated as Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPC) for the snapper-grouper complex because they serve as settlement areas for many species in the complex and are necessary for the maintenance of sustainable levels of fishery production in our region. Please refer to the rationale contained within the enclosed Habitat Plan and the associated scientific journal literature cited.

In terms of nearshore reefs, several studies have documented over 325 invertebrate species in association with these habitats on Florida's east coast. Recent fish research has demonstrated that these nearshore reefs support high densities of juvenile fishes in areas otherwise devoid of three-dimensional structure: these habitats are important nursery areas for

over 10 fish species managed under the Snapper-Grouper Fishery Management Plan. Collectively, over 500 species of fishes and invertebrates have now been documented from these habitats. Recent data also suggests nearshore reefs are nursery areas for endangered green turtles.

Assumptions that these are low-value habitats or that impacts are only short term have not used the above information and still don't thoroughly consider the probable cumulative effects (on bottom structure, water clarity, primary and secondary production) of continuously executing these massive dredge projects adjacent to the northernmost coral reefs on our continental shelf.

In addition, we are concerned that no information was presented in the public notice on how much offshore reef will be impacted by the adjacent extensive dredging operations, nor the total area of the 7 borrow sites. Considering direct and indirect impacts to these reefs from the excavation, sediment loading, and pipeline corridor, an Environmental Impact Statement (EIS) should be prepared to thoroughly evaluate the long-term and short-term effects at both the dredge and fill sites.

The Council is also concerned that this area is also the site of a local initiative to create a fishery reserve in shallow state waters. Reserve design is based on the premise of simultaneous protection of critical associated habitats. Burying most of the inshore nursery habitats and subjecting benthic organisms across the shelf to outright burial or multiple indirect stressors is highly questionable.

The permit application does not contain critical information concerning impacts to marine fish habitat (e.g., mapping of all hard/live bottom in the area, not only areas directly impacted). Compliance with the National Environmental Policy Act (NEPA) is not possible because no EIS was prepared to adequately describe direct as well as indirect impacts that could reasonably occur. Therefore, the Council feels the proposed project would cause significant and adverse long-term impacts to nationally important living marine resources and, unless issues are addressed and resolved in an EIS, the SAFMC recommends against granting Department of the Army authorization. As previously stated, without an adequate and environmentally and ecologically acceptable plan for minimizing the impact on Essential Fish Habitat-Habitat Areas of Particular Concern, the Council must conclude that significant harm to EFH will result. Our assessment of project impacts to EFH will continue and our recommendations may be supplemented.

Thank you and if you require any additional information do not hesitate to contact Bob Mahood or Roger Pugliese at the Council office.

Sincerely,

A handwritten signature in cursive script that reads "Pete Moffitt". To the right of the signature, the words "by Ram" are written in a smaller, less formal cursive script.

Pete Moffitt
Chairman

cc: SAFMC Members & Staff (letter only)

Habitat Advisory Panel (letter only)

Jim Weaver, Mike Barnette, Mark Godcharles, John Merriner, & Don Hoss (letter only)

Mike McLemore & Monica Smit-Brunello (letter only)

Andy Mager & Mike Johnson (letter only)



ENVIRONMENTAL DEFENSE

finding the ways that work

May 25, 2000

Col. Joe R. Miller
Regulatory Division - South Permits Branch
Jacksonville District, Army Corps of Engineers
400 West Bay St., Jacksonville, FL 32232-0019

RE: Broward County Beach Project Permit Application No. 199905545 (IP-DSG)

Dear Col. Miller,

Please accept the following comments regarding the Broward County beach protection project (Permit Application Number 199905545[IP-DSG]) from Environmental Defense (formerly Environmental Defense Fund) on behalf of our 17,000 members within the state.

Many aspects of this project are unusually large and may have direct and indirect effects upon a variety of biological resources. These include the following:

37 acres of nearshore hardbottom reef burial

Various studies of invertebrate and fish populations have identified nearshore hardbottom reefs of SE Florida as habitats for over 500 species (Nelson, 1989; Lindeman and Snyder, 1999). These habitats are important nursery areas for many of these species. There is also new information suggesting that these reefs can serve as intermediate nursery habitats for juvenile stages of endangered sea turtles (Drs. M. Salmon and L. Ehrhart, pers. comm.). We feel the above and related points require thorough consideration in the EIS being developed for this project.

7 "borrow" sites offshore for 3 million cy of fill, many near important coral reef areas

A variety of references demonstrate that indirect sedimentation effects can seriously damage corals, as well as direct effects. Given the Presidential Coral Reef Task Force Initiative, thorough consideration of such impacts are needed. For example, the current information in the public notice does not clearly identify the location of dredging sites relative to reef structures.

All of the nearshore hardbottom habitats proposed for burial and offshore reefs adjacent to these large dredge excavations were designated as EFH-HAPCs by the S. Atl. Fishery Management Council in 1998. A number of direct and indirect impacts to these essential fish habitats from the excavation, pipeline corridor, and fill areas are likely. In addition, this is also an area with a local initiative to create a marine reserve to increase fishery production in waters adjacent to/including borrow sites and dump areas.

We thank you for your efforts to address these concerns and appreciate the opportunity to offer comments. Also, please add our Miami office below to all of the mailing lists you use for public mailings on beach renourishment projects in Florida.

Sincerely,

Ken Lindeman, Ph.D.
Senior Scientist
Environmental Defense - Miami Field Office
14630 SW 144 Terrace, Miami, FL 33186
E: klindeman@environmentaldefense.org F: 305.356.9508 P: 305.256.9508

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
WATER MANAGEMENT DIVISION
SOUTH FLORIDA OFFICE
400 NORTH CONGRESS AVE., SUITE 120
WEST PALM BEACH, FLORIDA 33401

Colonel Joe Miller, District Engineer
ATTN: Diane S. Griffin
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

MAY 26 2000

SUBJ: Broward County
PN 199905545 (IP-DSG)

Dear Colonel Miller:

This letter is in response to the above referenced public notice for the project located in the Atlantic Ocean, in Section 31, Township 48 South, Range 43 East; Sections 5, 7, 18, 19, 30, Township 49 South, Range 43 East; Sections 6 and 7, Township 50 South, Range 43 East; Sections 24, 25, and 36, Township 50 South, Range 42 East; and Sections 1, 12, 13, 24, 25, and 26, Township 51 South, Range 42 East, Broward County, Florida. The purpose of the project is beach renourishment for restoration and stabilization of approximately 11.9 miles of beach shoreline along various beaches in Broward County. In Segment III, the applicant also proposes to construct a groin field located in the John U. Lloyd Beach State Recreation Area. Impacts to nearshore hardbottom habitat total 25 acres.

The Environmental Protection Agency (EPA) has reviewed the information contained in the public notice. According to 33 C.F.R. 320.4(a), every permit application is subject to a public interest review. In performing the public interest review, the Corps of Engineers is required to consider the relative extent of the public and private need for the proposed structure or work, and the need must be balanced against environmental harm. The public notice did not contain any information demonstrating the need for the beach renourishment, but it did state that 25 acres of hardbottom habitat would be impacted. Please provide a detailed discussion of the purpose and need for renourishment for all of the beaches of the project and for the groin field in Segment III.

The Clean Water Act, Section 404(b)(1) Guidelines at 40 C.F.R. Section 230.10 prohibit avoidable or significant adverse impacts to the aquatic environment. The Guidelines and the Mitigation Memorandum of Agreement between the Corps of Engineers and EPA require that an applicant demonstrate avoidance and minimization of impacts before compensatory mitigation may be considered. Specifically, no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem. The applicant has failed to provide the necessary alternatives analysis. Please provide a detailed alternatives analysis as required under the Guidelines.

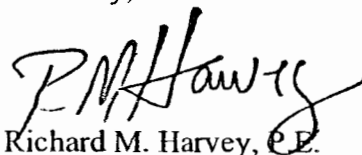
Although the public notice stated that 25 acres of nearshore hardbottom habitat would be impacted, no information describing the flora and fauna was provided. Please provide a detailed biological survey of the discharge areas. In addition, dredging in the borrow areas has the potential to impact additional hardbottom or coral reef habitats in the vicinity of the borrow areas. What safeguards will be taken to protect adjacent habitats from turbidity or other detrimental impacts of dredging?

Although the avoidance and minimization issues have not been addressed, EPA notes that compensatory mitigation was not proposed in the public notice. In the event that avoidance and minimization issues are satisfied, EPA requests mitigation for all of the acreage of impacted hardbottom habitat. However, EPA is opposed to the project until any compensatory mitigation is proved to be adequate compensation for impacts to nearshore hardbottom. The permit issued for renourishment of Juno Beach, permit number 199706559 (IP-BP), required monitoring of the compensatory mitigation area to assess fish recruitment and survival and to compare habitat value of artificial reef habitats placed in various depths with natural hardbottom habitat in shallow water. EPA requests that all beach renourishment projects impacting shallow water reef habitats be held in abeyance until we have reviewed the results of the Juno Beach monitoring study.

Nearshore hardbottom reef habitat is home to juvenile fishes and various sponges and corals. Several lines of evidence suggest that nearshore hardbottom habitats along the mainland coast of east Florida can serve as nursery areas for many coastal fish species and can support considerable larval abundances. (Lindeman, Snyder). For these reasons, EPA considers the hardbottom habitats found within this project site aquatic resources of national importance.

EPA requests that authorization for this project be denied. In accordance with the procedural requirements of the 1992 404(q) Memorandum of Agreement Part IV, 3(a) between our agencies, we are advising you that the proposed work may have substantial and unacceptable adverse impacts on aquatic resources of national importance. Thank you for the opportunity to comment on this request for authorization. If you have any questions, please contact Beth Burger at (561) 616-8878.

Sincerely,

A handwritten signature in black ink, appearing to read "R. M. Harvey".

Richard M. Harvey, P.E.
Director

cc: Allen Webb, FWS, Vero Beach, FL
Michael Johnson, NMFS, Miami, FL

Reference: Lindeman, Kenyon C. and David B. Snyder. Nearshore hardbottom fishes of southeast Florida and effects of habitat burial caused by dredging. Fish. Bull. 97:508-525 (1999).



United States Department of the Interior

FISH AND WILDLIFE SERVICE
South Florida Ecological Services Office
P.O. Box 2676
Vero Beach, Florida 32961-2676



May 26, 2000

Dianne Griffin, Project Manager
U.S. Army Corps of Engineers
Post Office Box 4970
Jacksonville, Florida 32232-0019

Log No.: 4-1-99-I-506
Application No.: 199905545 (IP-DSG)
Dated: April 26, 2000
Project : Broward County Shore Protection
Project
Applicant: Broward County Department of
Natural Resource Protection
County: Broward

Dear Ms. Griffin:

The Fish and Wildlife Service (Service) has reviewed the project plans submitted for the project referenced above. This letter is submitted in accordance with section 7 of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*) (ESA) and the provisions of the Fish and Wildlife Coordination Act of 1958 (48 Stat. 401, as amended; 16 U.S.C. 661 *et seq.*) (FWCA). This letter does not fulfill the requirements of section 2(b) of the FWCA.

The Service is also coordinating with the Army Corps of Engineers (Corps) Division of Planning in the preparation of a Coordination Act Report (CAR) per the requirements of section 2(b) of the FWCA for the Broward County Shore Protection Project. The projected completion of a draft CAR is August 31, 2000, pending receipt and evaluation of data on the project's impacts to biological resources within the area.

PROJECT DESCRIPTION

Broward County Department of Natural Resource Protection has submitted an application to the Corps to renourish 17 miles of coastline in Broward County, Florida. The proposed project is divided into two segments, labeled Segment II and Segment III. Segment II (Hillsboro Inlet to Port Everglades) is from DNR reference monuments R-34 to R-74. Segment III (Port Everglades to south county line) is from DNR reference monuments R-86 to R-128. The project will involve placement of approximately 3.5 million cubic yards of material along 17.35 miles of

coastline. Approximately 12.1 acres of nearshore hardbottom in Segment II and 25 acres in Segment III will be impacted by the beach fill placement. The Broward County Beach Shore Protection Project was authorized by Public Law, Public Works-River and Harbor (79 Stat. 1073), passed 27 October 1965, in accordance with the recommendations of the Chief of Engineers, House Document 91, 89th Congress.

In Segment II, fill will be placed along the coastline in southern Pompano Beach, Lauderdale-By-The-Sea, and northern and central Fort Lauderdale. In Segment III, fill will be placed along the entire segment including John U. Lloyd Beach State Recreation Area, Dania Beach, Hollywood, and Hallandale Beach. In addition to the placement of sand on the beach, a series of T-head groins will be constructed along the northernmost 0.5 mile of John U. Lloyd State Recreation Area. Fill will be obtained from seven borrow areas located between hard bottom areas offshore of the central and northern portion of the county, in depths ranging from 30 feet to 70 feet, and located from 0.75 to 1.50 miles offshore. Rocks contained in the borrow material will be segregated on the hopper dredge and deposited in two offshore rock disposal areas, which are located within permitted artificial reef disposal areas. The material to be dredged and placed on the beach contains an average of 3.3 percent silt and 2.9 percent rock.

ENDANGERED AND THREATENED SPECIES

Available information indicates that the federally endangered West Indian manatee (*Trichechus manatus*) is present in the project area. Available information also indicates that the federally threatened loggerhead sea turtle (*Caretta caretta*), the endangered green sea turtle (*Chelonia mydas*), the endangered leatherback sea turtle (*Dermochelys coriacea*), and the endangered hawksbill sea turtle (*Eretmochelys imbricata*) nest in the beach renourishment area. Therefore, the proposed activity may affect the manatee and sea turtles.

The Corps provided a determination that the project "may affect, but is not likely to adversely affect" the West Indian manatee, provided the standard manatee construction precautions are followed, and sea turtles. The manatee construction precautions are to be made a special condition of the Department of the Army permit should the Corps issue the permit for the proposed action. The Service concurs with the Corps determination for the endangered West Indian manatee. The public notice states that the applicant desires to work during the sea turtle nesting season. We do not have all the information necessary to determine to what extent the proposed action may affect listed sea turtles in order to determine if formal section 7 consultation on the proposed action is warranted. In order to concur with the determination for sea turtles, or to initiate formal consultation on the proposed action, the Service request that the Corps provide the following additional information on the potential effects of the project as required in the regulations governing interagency consultations (51 CFR 402.14). We will require the following information for each of the sea turtle species listed above:

1. a description of the sea turtle species occurrence and habitat conditions;

2. a description of potential effects to those species (*e.g.*, through loss and destruction of habitat, direct mortality, through disturbances and harassment);
3. a description of measures taken to avoid and minimize impacts to the species, measures to protect the species during and after project implementation, including the proposed monitoring program to evaluate sand compaction and escarpment formation, and an analysis of any cumulative effects;
4. a discussion of sea turtle nesting densities within each section of the beach nourishment, (*e.g.*, specific information and effects discussions need to be provided in relationship to the fact that large portions of Broward County beaches are on a nest relocation program, with the relocated eggs moved to John U. Lloyd State Recreation Area. An assessment of this action needs to include a discussion and effect analysis of the applicant's proposal to nourish the beaches during the turtle nesting season. Data presented to the Service on beach renourishment projects indicates that a substantial reduction in nesting activities occurs on nourished beaches following the first year of the project. This affect needs to be determined and assessed. The nesting activity in subsequent years also needs to be assessed for the nourished beaches); and
5. a discussion of the need for the ten T-shaped groins and their specific impacts on turtle nesting and hatchling entrapment; and
6. a discussion of the direct, secondary, and cumulative effects of the Corps proposed Port Everglades Harbor dredging project. Material from this project is also proposed for placement on portions of John U. Lloyd State Recreation Area.

National Marine Fisheries Service (NMFS) is responsible for the protection of marine species and seagrass in accordance with section 7 of the ESA. Hard bottom habitat has been identified as Essential Fish Habitat by NMFS; please contact the NMFS at (813) 893-3503 for any measures they may recommend.

FISH AND WILDLIFE RESOURCES

The information provided by the applicant proposes impacts to approximately 37 acres of nearshore hard bottom. The seven proposed borrow areas are located immediately offshore of the Broward County beaches and are located adjacent to high quality hard bottom coralline reefs.

The nearshore reef formations impacted by the proposed project are unique in a number of respects. They are sites which are colonized by a variety of invertebrates unique to these reef formations. One of the most important roles of the shallow nearshore reefs is as a refugia and feeding ground for juvenile fishes and some of the earliest life history states of reef fishes found commonly offshore as adults. The reason these small early stages require shallow nearshore environments and rock habitat is that they offer refugia from predation by large predators that

typically do not venture into these reef formations as well as protection from the surge associated with heavy surf in shallow water. The most notable fishery species that settle on these reefs are juveniles of the snappers (luthanidae), grunts (haemulidae), and groupers (serranidae). In addition, jacks (carangidae), porgies (sparidae), and drums-croakers (sciaenida) settle on these reefs as the earliest benthic juvenile development states. Besides fishery species, a wide variety of indigenous tropical reef species also use these inshore reefs as nursery grounds. These are most notably the basslets (serranidae), soapfishes (serranidae), butterfly fishes (chaetodontidae), angelfishes (pomacanthidae), damselfishes (pomacanthidae), parrotfishes (scaridae), wrasses (labridae), surgeonfishes (acanthuridae), blennies (labrisomidae and blenniidae), gobies (gobiidae) and all of the plectognath groups (Letter from R. Grant Gilmore, Estuarine, Coastal and Ocean Science, Inc., April 15, 2000).

The adjacent coralline communities are designated by the Service as a Resource Category 1 Habitat. The Service's mitigation policy (46 FR 7644-7663), defines Category 1 resources as "habitat to be impacted is of high value for evaluation species and is unique and irreplaceable on a national basis or in the ecoregion section." Mitigation goals of the Service is no loss of existing habitat value. The Service recommends that all losses of existing habitat be prevented as these one-of-a-kind areas cannot be replaced. Insignificant changes that do not result in adverse impacts on habitat value may be acceptable provided they will have no significant cumulative impact.

No information has been presented on the nearshore reef habitat. The Service requests that the Corps or applicant provide an evaluation of the quality of the biological community associated with the nearshore reefs, the importance of these reefs to the nursery stock of the adjacent deepwater reefs, and the productivity loss of these systems to the marine community for the projected lifespan of the renourishment. Include in this analysis the risk benefits of a 400-foot buffer versus a 200-foot buffer for the protection of the adjacent reefs during dredge operations.

The public notice states that a buffer of a minimum of 200 feet is proposed between the projected borrow areas and the adjacent reefs. No biological information is provided on the biological community profile in the borrow areas, the presence and density of scattered coralline colonies in the borrow areas, measures proposed to protect these communities, and measures proposed to protect the adjacent coralline reefs from turbidity produced by the hopper dredge during separation of rocks and debris from the beach quality sand.

The Service requests that the Corps or the applicant provide project aerials of the nearshore hard bottom communities, lateral and perpendicular biological surveys of the nearshore hard bottom communities, lateral and perpendicular biological surveys of the proposed borrow areas, and an assessment of the project's impacts on these communities.

The Service also requests an analysis of the mitigation requirements, if the proposed action is deemed to be the least-damaging practicable alternative. The alternative analysis needs to also include mitigation cost for the nearshore reef mitigation and monitoring and the sea turtle nest

beach monitoring. Mitigation must be approached in sequence: avoidance, minimization, then compensation. No compensatory mitigation proposal is discussed in the public notice. The mitigation for the loss of the nearshore hard bottom community needs to incorporate temporal lag in resource function development from loss of these communities to their replacement with similar types of habitat (standard is an increase in mitigation acreage of 3 percent per year of the community lost). The evaluation also needs to examine the various types of nearshore hard bottom communities proposed for mitigation on past renourishment projects, their success, and their applicability to the type for type zone impacted by the proposed project.

The Service also suggests that any mitigation plan proposed provide sufficient compensation so as to provide for no net loss of both the nearshore hard bottom community and the borrow areas scattered coralline communities. Any approved mitigation proposal should detail what work will be done at the mitigation sites and what will be included in the monitoring plan.

In the absence of information addressing our above-stated concerns and in view of the potential for this project to adversely affect fish and wildlife resources and their habitats, we recommend denial of a permit for this project, as proposed. In accordance with the procedural requirements of the 1992 404(q) MOA, Part IV, 3(a) between our agencies, we are advising you that the proposed work may affect aquatic resources of national importance. The above findings and recommendations constitute the report of the Department of the Interior.

Thank you for allowing us to provide these comments. We are available to meet with agency representatives and the applicant to resolve outstanding resource issues associated with this project. If you have any questions, please contact Mr. Allen Webb at (561) 562-3909 extension 246.

Sincerely yours,

Kalani D. Cairns

James J. Slack
Project Leader
South Florida Ecological Services Office

cc:

FWC, Vero Beach, FL
FWC, (BPSM)Tallahassee, FL (Carol Knox)
Service, Jacksonville, FL (Manatee Coordinator)
FDEP, West Palm Beach, FL
Broward County Natural Resources Department, Ft. Lauderdale, FL
EPA, West Palm Beach, FL
NMFS, St. Petersburg, FL
Corps, Jacksonville, Planning, Evon Haberer



FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION

JAMES L. "JAMIE" ADAMS, JR. Bushnell
BARBARA C. BARSH Jacksonville

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DAVID K. MEEHAN St. Petersburg

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TONY MOSS Miami

EDWIN P. ROBERTS, DC Pensacola

JOHN D. ROOD Jacksonville

ALLAN L. EGBERT, Ph.D., Executive Director
VICTOR J. BELIER, Assistant Executive Director

BUREAU OF PROTECTED SPECIES MANAGEMENT
DAVID W. ARNOLD, CHIEF
(850) 922-4330
FAX (850) 922-4338

May 26, 2000

Dr. John Hall
Chief, Regulatory Division
Department of the Army
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Dr. Hall:

RE: Public Notice for Broward County
Beach Nourishment Project

The project is to excavate beach quality material from nearshore borrow sites, to place this material along Broward County beaches, including Pompano Beach, Lauderdale-by-the-Sea, Fort Lauderdale, John U. Lloyd Beach State Recreation Area, Dania, Hollywood, and Hallandale, and to construct 11 t-head groins on state land at John U. Lloyd Beach S.R.A.

Both the U.S. Fish & Wildlife Service (USFWS 1999) and the Florida Fish and Wildlife Conservation Commission (Meylan *et al.* 1995) consider Broward County an important nesting area for loggerhead, green, and leatherback sea turtles. Conducting beach nourishment during the marine turtle nesting season, which begins March 1 in this part of the state due to leatherback nesting, would have a negative impact on marine turtles. Although it is clear that some nests are missed during surveys in Broward County, as in any county surveyed, there have been no rigorous assessments of this number. Therefore, it would not be possible to assess the potential take of missed nests due to any activity during the nesting season.

Because of the lack of beachfront construction and lights landward of the nesting beach, John U. Lloyd State Recreation Area represents some of the better quality nesting habitat available in Broward County. The park, which accounts for approximately 10% of the nesting beach length available in Broward County, has typically accounted for approximately 6 to 10% of the loggerhead turtle nests deposited in the county over the past ten years. Approximately 72% or more of the loggerhead nests in Broward County are currently being relocated. Our office is working with the County to lower this number, but for now John U. Lloyd S.R.A. provides an important nesting area in the County where most nests can remain in the beach without artificial manipulation. In addition, during 1998, the park accounted for approximately 11% of the nesting of the endangered green turtle and 22% of the nests deposited by the endangered leatherback turtle in the county. It is not clear that it would be appropriate to construct t-head

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leatherback turtle in the county. It is not clear that it would be appropriate to construct t-head groins in this area, which provides crucial marine turtle nesting habitat for marine turtles and is earmarked for resource-based public recreation. These groins could interfere with both marine turtle nesting and the public's use of the beach. We are reviewing the proposed use of such structures with caution until the full impact of placing these structures on marine turtle nesting beaches can be determined.

The exposed t-head on the groins, which is above MHW, will interfere with the ability of female turtles to access the beach in the vicinity of the groins. A review of the proposed design suggests that up to 44% of the beach length within the groin field area in the park could be preempted from nesting by the shore-parallel t-head structures in the nearshore region. Also, the beach between such groins often forms a cusped scarp that could interfere with access to suitable nesting habitat in those areas not within the shadow of the t-head. Hatchlings have become trapped in the shore-parallel component of the t-heads for at least one other t-head groin. Although our agency has not objected to the use of t-head groins in other areas, these sites typically had very low to no nesting activity due to lack of suitable nesting substrate. John U. Lloyd State Recreation Area continues to support approximately 60 or more loggerhead nests per kilometer as well as green and leatherback turtle nests, and thus must be protected as suitable marine turtle nesting habitat.

The current Federal Authorization for this project and the Coast of Florida Environmental Assessment do not include the t-head groins. Given that such groins have been found to cause take of marine turtles through interference with breeding behavior and entrapment of hatchlings, this component of take would have to be addressed within the Incidental Take Authorization and Biological Opinion for this project. In addition, the Biological Opinion for the Coast of Florida Study restricts nourishment activity in Broward County as being started after October 31 and completed by May 1.

The following additional information will be necessary for us to complete our review of the proposed project, to determine potential impacts to marine turtles, and to assess the consistency of the proposed project with state statute protecting marine turtles.

1. Please provide all individual grain size distribution (gsd) data for both the beach and borrow site samples, not just composites. Please specify the color of the borrow sediments, both wet and dry.
2. Please describe how the rubble will be removed from the borrow sediments and kept from placement on the nesting beach. What type of postconstruction monitoring will be done to determine if any unsuitable rubble or large fragments have been placed on the nesting beach? Any such monitoring should be conducted to a depth of 36 inches to ensure that there is no large gravel or rubble deeper in the beach that could interfere with marine turtle nesting.
3. In order to minimize impacts of the elevated, postconstruction beach berm on nesting marine turtles and their hatchlings, we have been working with applicants on the development of a more natural beach profile for nourishment projects. Typically, such a profile would have a fairly abrupt, subtidal slope, a more gradual slope in the intertidal and berm areas (1.5:1 or

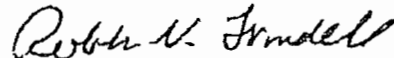
Broward County Beach Nourishment
May 26, 2000
Page 3

better) to minimize scarp formation, and an abrupt, transitional slope approximating a dune feature at the landward edge of the project. Such a design may enhance project longevity, since more material is placed at the landward edge of the project where it is less susceptible to wave impacts except during high water events. Creation of a relatively high berm during nourishment can impact turtles in at least two ways, since nests deposited within the berm may be susceptible to light sources not visible from the pre-project beach, and female turtles have fallen from the landward edge of elevated construction berms. Sloping the construction berm abruptly higher at the landward edge can shade many lights that might otherwise become visible on the elevated berm as well as provide additional protection for landward properties.

4. Please provide a tentative time schedule for the different segments of the nourishment work.
5. Please provide a plan for removal of all derelict structures. Are there any derelict geotextile structures within the project area?

Thank you for the opportunity to review this project. Please call me at (850) 922-4330 if you have any questions or require additional information.

Sincerely,



Robbin N. Trindell, Ph.D.

Bureau of Protected Species Management

Cc: Brad Reich, USFWS, Vero Beach
Sandy MacPherson, USFWS, Jax
Lou Fisher, Broward County
Mark Latch, DEP-DRP
J.B. Miller, DEP-District 4

References

U.S. Fish & Wildlife Service. 1999. South Florida Multi-species Recovery Plan.

Meylan, A., B. Schroeder, and A. Mosier. 1995. Sea Turtle Nesting Activity in the State of Florida: 1979 - 1992. Florida Marine Research Institute Technical Report No. 52, 51 pp.

South
Florida
Regional
Planning
Council



59 June 0
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VIA FACSIMILE/U.S. MAIL

June 1, 2000

Col. Joseph R. Miller
Department of the Army
Jacksonville District Corps of Engineers
PO Box 4970
Jacksonville, Florida 32232-0019

RE: SFRPC #00-0503, USACE #199905545 (IP-DSG) - Restoration and stabilization of approximately 63,000 feet of beach shoreline, Broward County.

Dear Mr. Miller:

We have reviewed the above-referenced project and have the following comments:

- Beaches and dune systems are identified as natural resources of regional significance in the *Strategic Regional Policy Plan for South Florida*. Council staff supports the implementation of beach renourishment projects for the purposes of providing storm protection for upland property, restoring dunes and maintaining eroding beaches. Staff supports the use of buffer zones to protect these important resources.
- The use of groins and other hard coastal protection structures may adversely impact benthic resources and deprive downdrift shorelines of sand. Sand movement and downdrift erosion should be monitored on a region wide basis to ensure the livelihood of wildlife habitats and the stability of renourished areas. All actions should be consistent with the goals and policies of the Broward County comprehensive plan.
- In addition, the permit application indicates that the project may impact sea turtles and essential fish habitat. Staff recommends that, if the proposed actions are implemented, 1) impacts to the natural systems be minimized to the greatest extent feasible and 2) the permit grantor determine the extent of sensitive marine life and vegetative communities in the vicinity of each project and require protection and or mitigation of disturbed habitat. These guidelines will assist in reducing the cumulative impacts to native plants and animals, wetlands and deep water habitat and fisheries that the goals and policies of the *Strategic Regional Policy Plan for South Florida* seek to protect.
- The goals and policies of the *Strategic Regional Policy Plan for South Florida*, in particular those indicated below, should be observed when making decisions regarding this project.

Strategic Regional Goal

- 3.1 Eliminate the inappropriate uses of land by improving the land use designations and utilize land acquisition where necessary so that the quality and connectedness of Natural Resources of Regional Significance and suitable high quality natural areas is improved.

3440 Hollywood Boulevard, Suite 140, Hollywood, Florida 33021
Broward (954) 985-4416, Area Codes 305, 407 and 561 (800) 985-4416
SunCom 473-4416, FAX (954) 985-4417, SunCom FAX 473-4417
e-mail sfadmin@sfrpc.com

Regional Policies

- 3.1.1 Natural Resources of Regional Significance and other suitable natural resources shall be preserved and protected. Mitigation for unavoidable impacts will be provided either on-site or in identified regional habitat mitigation areas with the goal of providing the highest level of resource value and function for the regional system. Endangered faunal species habitat and populations documented on-site shall be preserved on-site. Threatened faunal species and populations and species of special concern documented on-site, as well as critically imperiled, imperiled and rare plants shall be preserved on-site unless it is demonstrated that off-site mitigation will not adversely impact the viability or number of individuals of the species.
- 3.1.9 Degradation or destruction of Natural Resources of Regional Significance, including listed species and their habitats will occur as a result of a proposed project only if:
- a) the activity is necessary to prevent or eliminate a public hazard, and
 - b) the activity is in the public interest and no other alternative exists, and
 - c) the activity does not destroy significant natural habitat, or identified natural resource values, and
 - d) the activity does not destroy habitat for threatened or endangered species, and
 - e) the activity does not negatively impact listed species that have been documented to use or rely upon the site.
- 3.1.10 Proposed projects shall include buffer zones between development and existing Natural Resources of Regional Significance and other suitable natural resources. The buffer zones shall provide natural habitat values and functions that compliment Natural Resources of Regional Significance values so that the natural system values of the site are not negatively impacted by adjacent uses. The buffer zones shall be a minimum of 25 feet in width. Alternative widths may be proposed if it is demonstrated that the alternative furthers the viability of the Natural Resource of Regional Significance, effectively separating the development impacts from the natural resource or contributing to reduced fragmentation of identified Natural Resources of Regional Significance.

Strategic Regional Goal

- 3.4 Improve the protection of upland habitat areas and maximize the interrelationships between the wetland and upland components of the natural system.

Regional Policies

- 3.4.4 Require the use of ecological studies and site and species specific surveys in projects that may impact natural habitat areas to ensure that rare and state and federally listed plants and wildlife are identified with respect to temporal and spatial distribution.
- 3.4.5 Identify and protect the habitats of rare and state and federally listed species. For those rare and threatened species that have been scientifically demonstrated by past or site specific studies to be relocated successfully, without resulting in harm to the relocated or receiving populations, and where *in-situ* preservation is neither possible nor desirable from an ecological perspective, identify suitable receptor sites, guaranteed to be preserved and managed in perpetuity for the protection of the relocated species that will be utilized for the relocation of such rare or listed plants and animals made necessary by unavoidable project impacts. Consistent use of the site by endangered species, or documented endangered species habitat on-site shall be preserved on-site.

3.4.8 Remove invasive exotics from all Natural Resources of Regional Significance and associated buffer areas. Require the continued regular and periodic maintenance of areas that have had invasive exotics removed.

3.4.9 Required maintenance shall insure that re-establishment of the invasive exotic does not occur.

Strategic Regional Goal

3.8 Enhance and preserve natural system values of South Florida's shorelines, estuaries, benthic communities, fisheries, and associated habitats, including but not limited to, Florida Bay, Biscayne Bay and the coral reef tract.

Regional Policies

3.8.1 Enhance and preserve natural shoreline characteristics through requirements resulting from the review of proposed projects and in the implementation of ICE, including but not limited to, mangroves, beaches and dunes through prohibition of structural shoreline stabilization methods except to protect existing navigation channels, maintain reasonable riparian access, or allow an activity in the public interest as determined by applicable state and federal permitting criteria.

3.8.2 Enhance and preserve benthic communities, including but not limited to seagrass and shellfish beds, and coral habitats, by allowing only that dredge and fill activity, artificial shading of habitat areas, or destruction from boats that is the least amount practicable, and by encouraging permanent mooring facilities. Dredge and fill activities may occur on submerged lands in the Florida Keys only as permitted by the Monroe County Land Development Regulations. It must be demonstrated pursuant to the review of the proposed project features that the activities included in the proposed project do not cause permanent, adverse natural system impacts.

3.8.3 As a result of proposed project reviews, include conditions that result in a project that enhances and preserves marine and estuarine water quality by:

- a) improving the timing and quality of freshwater inflows;
- b) reducing turbidity, nutrient loading and bacterial loading from wastewater facilities and vessels;
- c) reducing the number of improperly maintained stormwater systems; and
- d) requiring port facilities and marinas to implement hazardous materials spill plans.

3.8.4 Enhance and preserve commercial and sports fisheries through monitoring, research, best management practices for fish harvesting and protection of nursery habitat and include the resulting information in educational programs throughout the region. Identified nursery habitat shall be protected through the inclusion of suitable habitat protective features including, but not limited to:

- a) avoidance of project impacts within habitat area;
- b) replacement of habitat area impacted by proposed project; or
- c) improvement of remaining habitat area within remainder of proposed project area.

3.8.5 Enhance and preserve habitat for endangered and threatened marine species by the preservation of identified endangered species habitat and populations. For threatened species or species of critical concern, on-site preservation will be required unless it is demonstrated that off-site mitigation will not adversely impact the viability or number of individuals of the species.

Col. Joseph R. Miller
June 1, 2000
Page 4

Thank you for the opportunity to comment. We would appreciate being kept informed on the progress of this project. Please do not hesitate to call if you have any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read 'Eric Silva', with a large, sweeping horizontal stroke underneath.

Eric Silva
Senior Planner

ES/kc

cc: Ralph Cantral, FCMP
Earl Hahn, Broward County
Stephen H. Higgins, Broward County



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

File

June 13, 2000

4WM-WCNPS

Joe R. Miller, District Engineer
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, FL 32232-0019

Attn: Regulatory Division
South Permits Branch

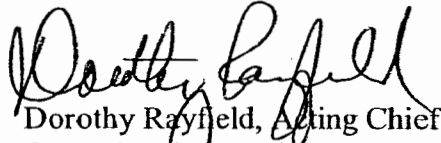
Dear Colonel Miller:

This letter is in regards to the April 26, 2000, public notice for permit application number 199905545. The applicant, Broward County, proposes beach renourishment including restoration and stabilization of various beaches in Broward County. Material for the project is to be obtained from borrow sites by hopper dredge. The public notice states that rock and shell greater than 1 inch diameter dredged from the borrow area would be filtered out and disposed at two artificial reef areas.

Disposal of dredged material in the ocean requires a permit pursuant to the Marine Protection Research and Sanctuaries Act of 1972 and its implementing regulations (40 CFR part 225) and must be evaluated by the Corps of Engineers and EPA in accordance with criteria set forth in 40 CFR part 227. Additionally, selection of appropriate disposal areas must be conducted in accordance with 40 CFR part 228. According to "Guidelines for Marine Artificial Reef Materials" (Gulf States Marine Fisheries Commission, 1997), "shell is small, light weight material and consequently would have a tendency to be silted over in moderate to high energy situations...it is doubtful that shell would be of any value in offshore areas because the deeper water and currents would tend to scatter the shell over a wide area, offering little relief or continuous hard bottom habitat." Although the regulations do not require a permit for placement

of materials for developing fisheries resources, this material does not appear to meet that criteria due to its limited size (1 inch). If you have any questions regarding these comments, please contact Mr. Chris McArthur at (404) 562-9391.

Sincerely,

A handwritten signature in black ink, appearing to read "Dorothy Rayfield". The signature is fluid and cursive, with the first name "Dorothy" being more prominent.

Dorothy Rayfield, Acting Chief
Coastal and NonPoint Source Section

cc: Beth Burger, South Florida Office



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

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Pence

JUN 21 2000

Colonel Joe Miller, District Engineer
U.S. Army Corps of Engineers
ATTN: Diane S. Griffin
P.O. Box 4970
Jacksonville, FL 32232-0019

Dear Colonel Miller:

I am writing in response to your request for comments on a beach nourishment project proposed by Broward County (PN 199905545 IP-DSG). The location of the proposed project is the shoreline of the Atlantic Ocean at Section 31 East, Township 48 South, Range 43 East; Sections 5, 7, 18, 19, 30, Township 49 South, Range 43 EAST; Sections 6 and 7, Township 50 South, Range 43 East; Sections 34, 35, 36, Township 50 South, Range 42 East; and Sections 1, 12, 13, 24, 25, and 26, Township 51 South, Range 42 East, Broward County, Florida. The stated purpose of the project is to restore and stabilize approximately 11.9 miles of beach shoreline. In Segment III, the applicant also proposes to construct a groin field at John U. Lloyd Beach State Recreation Area. Completion of this project as proposed would destroy approximately 37.1 acres of nearshore hard-bottom habitats.

Nearshore hard bottoms provide habitat to fishes, sponges, corals, and many other marine organisms. Seventy-seven fish species have been found to utilize nearshore hard-bottom habitats in southeast Florida. Nearshore hard bottoms are an important nursery area for 34 species of fishes and support considerable abundances of post larval and juvenile life stages (Lindeman and Snyder, 1999). For these reasons, the Environmental Protection Agency (EPA) considers the nearshore hard-bottom habitats found within this project site to be an aquatic resource of national importance.

The permit issued for renourishment of Juno Beach (199706559 IP-BP) was conditioned to include intensive monitoring of the natural hard-bottom habitat and compensatory mitigation areas to assess fish recruitment and survival and compare the habitat value of artificial reefs placed at various depths with natural hard-bottom habitat found in shallow water. EPA requests that the subject application to nourish beaches in Broward County, and all other beach nourishment projects impacting shallow water reef habitats, be held in abeyance until we have reviewed the results of the Juno Beach monitoring project. Lacking that data, it is our opinion that construction of artificial reefs at depths greater than the area of impacts does not adequately compensate for the nearshore hard-bottom habitats lost through beach nourishment.

Please note that it is our opinion that the public notice was deficient in several important areas. It did not contain any information documenting the need for beach renourishment. Please

provide a detailed discussion of the purpose and need for renourishment for all of the beaches and for the proposed groin field in Segment III. Also, the Section 404 (b)(1) Guidelines require that the applicant demonstrate avoidance and minimization; the notice did not include an alternatives analysis. Finally, a detailed biological survey of the borrow and discharge areas is required to fully assess the biological impacts of the dredging and filling activities. A discussion of safeguards proposed to protect adjacent habitats from turbidity or other detrimental impacts of dredging is required.

In accordance with the procedural requirements of the 1992 404(q) Memorandum of Agreement Part IV, 3(b) between our agencies, we are advising you that the proposed work will have substantial and unacceptable adverse impacts on aquatic resources of national importance. Thank you for the opportunity to comment on this request for authorization. If you have any questions, please contact Bill Kruczynski in our South Florida Office at (305) 743-0537.

Sincerely,



John H. Hankinson, Jr.
Regional Administrator

cc: Allen Webb, FWS, Vero Beach, FL
Michael Johnson, NMFS, Miami, FL

Reference: Lindeman, K.C. and D.B. Snyder. 1999. Nearshore hard bottom fishes of southeast Florida and effects of habitat burial caused by dredging. Fish. Bull. 97:508-525.



29 June 00

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE

Southeast Regional Office
9721 Executive Center Drive North
St. Petersburg, Florida 33702

June 26, 2000

Colonel Joe R. Miller
District Engineer, Jacksonville District
Department of the Army, Corps of Engineers
Regulatory Division, South Permits Branch
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Miller:

The National Marine Fisheries Service (NMFS) has reviewed the public notice dated April 26, 2000, regarding permit application number 199905545 (IP-DSG). The applicant, Broward County, proposes to renourish 11.9 miles of beach on the Atlantic Ocean from Pompano Beach to Hallendale, Broward County, Florida. The project is divided into two renourishment areas, Segment II (5.1 miles) and Segment III (6.8 miles). Eleven groins are proposed in the northern section of Segment III. Approximately 37.1 acres of nearshore hard bottom habitat will be impacted by the beach fill. In addition, about 250 acres of sand material will be dredged from seven offshore borrow areas to be used as beach fill. An undetermined amount of hard bottom and corals may be impacted within the borrow areas and pipeline corridors. This uncertainty is due to a lack of detailed maps depicting the biological resources in the project area which prevents the quantification of potential impacts. Significantly, this project will adversely affect Essential Fish Habitat (EFH) as defined by 1996 amendment to the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA). Our comments are provided in accordance with the consultation provisions of the MSFCMA and implementing regulations (Federal Register Vol. 62, No. 244) and other Federal environmental laws.

The South Atlantic Fishery Management Council (SAFMC) has identified EFH in the project area for species they manage including shrimp, the snapper-grouper complex (containing ten families and 73 species), Spanish and king mackerel, coral, and coral reef communities, and spiny lobster. The NMFS has identified EFH for highly migratory species that include billfishes and species of sharks that inhabit this area, such as nurse, blacktip, sandbar, lemon, and bull sharks. Likewise, the Mid Atlantic Fishery Management Council has identified EFH for bluefish that includes pelagic waters in the project area from the coastline to well beyond the construction limits for this project. Various life stages of some managed species found in the project area include larvae, postlarvae, juvenile and adult stages of red, gray, lane, schoolmaster, mutton and yellowtail snappers; scamp; speckled hind, red, yellowedge and gag groupers; Spanish and king mackerel; bluefish; white grunt; and spiny lobster.



In addition to EFH for Federally managed species, hard bottom, coral, and shallow nearshore habitats provide nursery, foraging, and refuge habitat for other commercially and recreationally important fish and shellfish. Species such as blue crab, shrimp, flounder, red drum, pompano, snook, striped mullet, tarpon, and a variety reef fish and tropical fish are among the many species that utilize this habitat. Several of the species listed above are identified as being of "national economic importance" in Section 906(e)(1) of the Water Resources Development Act of 1986(PL 99-602) and therefore are aquatic resources of national importance (ARNI). These include blue crab, shrimp, snappers, red drum, bluefish, Spanish and king mackerel, pompano, tarpon, and flounder. In accordance with Part IV, Section 3(a) of the current Memorandum of Agreement between the Departments of Commerce and the Army, the proposed project may result in substantial and unacceptable impacts to ARNI.

Categories of affected EFH include marine water column (including pelagic waters), live/hard bottoms, coral, coral reefs, and artificial/manmade reefs. The SAFMC also has identified EFH Habitat Areas of Particular Concern (HAPC) within the project area. HAPCs are subsets of EFH that are rare, particularly susceptible to human-induced degradation, especially ecologically important, or located in an environmentally stressed area. Offshore areas of high habitat value or vertical relief, and habitats used for migration, spawning, and rearing of fish and shellfish have been included within HAPC. Specifically, categories of HAPC in the vicinity of the proposed project include hermatypic coral habitat and reefs, and hard bottom habitats.

It is the NMFS assessment that this project will adversely affect EFH for Federally managed species and ARNI, as well as habitat for other important living marine resources. The impacts from this project occur within at least three spatial categories: offshore borrow areas, pipeline corridors, and nearshore fill areas. The following is a discussion of the potential impacts to marine resources within these areas. Comments regarding the proposed construction of eleven groins in Segment III also have been provided.

Offshore Borrow Areas

Environmental assessments completed for past beach renourishment projects have placed variable emphasis on the adverse effects that dredging operations have on benthic habitats adjacent to, and within, borrow areas. Although published reports on impacts to hard bottom and reef communities are uncommon in the scientific literature, available studies suggest that the impacts are more prevalent and extensive than often assumed. Benthic communities are impacted by dredging operations in at least three ways: 1) mechanical, 2) siltation/sedimentation, and 3) turbidity. Mechanical impacts occur when dredge equipment such as dredge heads, cables, or barge anchors crush, break, dislodge, or remove benthic resources. Siltation and sedimentation impacts occur when sand and silt, re-suspended into the water column from the dredge and fill operation, settle-out over reefs and hard bottom habitats. Turbidity, or resuspension of sedimentation in the water column, causes a decrease in water clarity and light penetration and can have a long residence time (from weeks to months) after the termination of dredging (Goldberg 1989).

The mosaic nature of hard bottom habitat in southeast Florida increases the probability that impacts may occur during dredging operations. Mechanical damage to coral heads within and adjacent to borrow areas has been documented at Hallendale Beach in 1971-1972 and 1979 (Courtenay *et al.*

1974, 1980); Miami Beach in 1977-1978 (Marszalek 1981); Sunny Isles in 1988 (Blair *et al.* 1990a); and Bal Harbor in 1990 (Blair *et al.* 1990b). In the 1988 Sunny Isles project, post-construction investigations revealed that the dredge cutter head had inadvertently impacted 2.2 acres outside the borrow area, including an estimated 1.5 acres of benthic hard bottom habitat. Over 25,000 hard coral colonies, 24,000 soft coral colonies and over 2,000 barrel sponges were destroyed by the dredging equipment. Acute angles, or "dog-legs," in the borrow site boundaries and inadequate buffer zones contributed to the adjacent hard bottom impacts (Blair *et al.* 1990a). In the Bal Harbor project, all of the mechanical impacts from the dredge equipment occurred within the defined limits of the borrow area. An estimated 155 hard coral colonies and an undetermined number of soft corals, sponges, algae, invertebrates and fish were killed (Blair *et al.* 1990b).

The impacts to the sand borrow areas and their associated macro-invertebrate communities from the dredging operation may be more extensive and long-term than has been suggested in assessments for previous beach nourishment projects (USACE 1987, 1994, and 1996). These studies have concluded that perturbations within borrow areas are negligible due to rapid re-establishment of the infaunal communities. However, re-examination of data from borrow areas and reference areas of four beach renourishment projects on the southeast Florida coast, found that changes to the infaunal community structure may persist for 2-3 years or more (Wilber and Stern 1992). Other studies have shown a decrease in diversity and abundance of the infaunal community in borrow areas several years following the dredging (Turbeville and Marsh 1982; Goldberg 1989). The impact that such projects have on macro-invertebrate communities should be considered as significant because they are either directly, or indirectly, a major portion of the diet of many fish and macrocrustaceans (Baird and Ulanowicz 1989). The State of Florida and the Florida Keys National Marine Sanctuary have prohibited the collection of "live sand" (i.e. sand material, typically containing a high diversity of algal, bacterial and macroinvertebrate species, used in the aquarium trade industry) within the Sanctuary, stating that the sand substrate is an important habitat for grazers and detritivores and the removal of this habitat was determined to adversely impact marine productivity, fisheries, wildlife habitat and water quality (Florida Department of Environmental Protection 1998).

Siltation can be detrimental to the growth and survival of reefs and the majority of associated species, including filter-feeding organisms such as hard corals, sponges, and soft corals. Other organisms such as algae, crustaceans, and fishes also can be adversely affected (Dodge and Vaisnys 1977; Bak 1978; Marszalek 1981; Herrnkind *et al.* 1988; Goldberg 1989; Nelson 1989; Hughes and Connell 1999). Sediment damage to hard bottom and coral reefs have been documented at John U. Lloyd State Park (Britt and Associates 1979), the Miami Beach project in the late 1970s (Marszalek 1981), and the Bal Harbor project in 1990 (Blair *et al.* 1990b). Sediment damage to corals off J.U. Lloyd Park in 1977 were attributed to sea conditions and improper loading operations with a hopper dredge (Britt and Associates 1979). In the Miami Beach project, silt layers 0.5-1.3 inches thick were observed on the patch reefs in the vicinity of the borrow areas. Post-construction surveys conducted for the Bal Harbor project revealed that a total of 24.8 acres of hard bottom reef habitat was impacted by sedimentation, with sediment depths of 1-5 inches. The report estimated that over 53 percent of the hard coral colonies were killed by sedimentation, equivalent to the loss of 18,279 colonies. Inadequate buffer zones surrounding the borrow areas contributed to the impacts in this project (Blair *et al.* 1990a).

Turbidity impacts are chronic perturbations that cause long-term reductions in primary and secondary productivity of reef and hard bottom communities by reducing water clarity and light penetration. Seven years after the completion of the 1971 Hallendale project, persistent turbidity resulted in visibility of less than 2 meters in the nearshore areas (Courtenay *et al.* 1980). Elevated turbidity levels near hard bottom and coral reef habitat is particularly detrimental to photosynthetic organisms such as the zooxanthellae found in corals and algae (Dodge and Vaisnys 1977; Bak 1978). Filter feeding organisms, such as sponges and tube worms can be adversely affected by turbidity as well (Hay and Sutherland 1988). Experimental studies have demonstrated that hard corals are adversely affected at levels below the current Florida administrative threshold of 29 NTUs (Teleniski and Goldberg 1995a; 1995b). In the Bal Harbor project, for example, the turbidity levels were seldom over 3 NTUs, yet 1-5 inches of sediment were deposited over 24.8 acres of hard bottom (Blair *et al.* 1990b).

While the effects of sedimentation and siltation can result in acute stress and sudden death, exposure to chronic, high turbidity levels can cause stress responses and a reduction in the health and growth of algae, corals, and filter feeding organisms (Dodge *et al.* 1974; Dodge and Vaisnys 1977; Bak 1978). Corals, when exposed to extended periods of high turbidity, lose the ability to clear sediments (Clarke *et al.* 1993). Suspension of sediment has been shown to cause mortality of eggs and larvae of marine and estuarine fish (Newcombe and Jensen 1996) and a reduction in feeding in juvenile and adult fish also can be expected. Reduced feeding success may influence survival, year-class strength, and recruitment of juvenile fish that inhabit nearshore hard bottom and coral reef habitats (Wilber and Clarke, draft manuscript).

The distance that sediment plumes may extend from the dredge depends upon the type of dredge, the operator, currents, and sediment type. Goldberg (1989) suggested that the mixing zone dimensions around the dredge be the minimum distance between the hard bottom area and the borrow site. Since the mixing zone around the dredge is typically 450 feet or more, a buffer zone around the borrow area less than this will likely cause impacts to hard bottom reefs. However, sediment plumes have been documented to travel along the bottom for some distance away from the dredge. For example, elevated sediment levels were recorded 1,100 feet from the borrow area in the 1990 Bal Harbor project, and were estimated to continue up to 1,200 feet (Blair *et al.* 1990). Steve Higgins of Broward County, Biological Resources Division, indicates the current project incorporates only a proposed 200-foot buffer zone between the borrow areas and adjacent hard bottom reefs.

The bathymetric maps that were provided indicate that low to high relief structure exists adjacent to all seven borrow areas (within 150 feet from several borrow areas). There is a high probability that some of this structure represents living corals and hard bottom habitat. In addition, all seven borrow areas contain what was classified as two to six-foot "rubble layers" and "rubble rock" (some borrow areas contain "rubble layers" of 10 feet). According to information in the public notice this material would be filtered out and disposed at two artificial reef sites (John U. Lloyd and Deerfield rock disposal site). We have some concerns that disposing this material at artificial reef sites may bury organisms and communities that have established there. Since no information was provided on whether or not silt and other fine sediment will first be removed from this material before disposal, sedimentation and turbidity may create additional impact to the artificial reef.

Pipeline Corridors

Pipeline damage to hard bottom reefs can be expected from mechanical damage (crushing and scraping) from the pipeline itself, as well as from anchors holding the pipeline in place and cables attached to buoys marking the pipeline. Some impacts to macroalgae and soft and hard corals can be expected from shading, as well. Impacts can, however, be reduced by elevating the pipe a few inches off the bottom using collars or connector rings on the pipeline. Although relatively rare, breaches in pipelines have been documented in past south Florida beach renourishment projects. A 1999 project in North Miami Beach resulted in over 1,000 cubic yards of sand being deposited over a reef that was crossed by the pipeline. All benthic organisms within an area of approximately 4,000 square feet were reported to have died due to the placement of at least one inch of sand on the reef (R. Mulcahy, personal communication).

Nearshore Fill Areas

The proposed renourishment project encompasses 11.9 miles of beach shoreline and will bury 37.1 acres of nearshore hard bottom. The hard bottom outcrops within this project are part of the Miami Oolite Formation, and have been expanded by colonies of tube-building polychaete worms (i.e. worm rock reefs) and other invertebrate and macroalgal species. These nearshore hard bottoms are extremely diverse habitats and the high abundance of organisms found there is important to nearshore fishes. In a relatively modest sampling effort, Nelson (1989) found a total of 325 plant and animal species on subtidal rock outcrops at Sebastian Inlet Harbor. Algal species (62), represented the most speciose group in his study. A study conducted in Indian River County, reported 109 species of benthic algae growing on nearshore reefs off Vero Beach, Florida (Juett *et al.* 1976). Other studies have documented the high diversity associated with nearshore hard bottom habitats (Gore *et al.* 1978; van Montfrons 1981; Vare 1991; Nelson and Demetriades 1992). Because many organisms associated with nearshore hard bottom habitats are sessile and have no ability to burrow up through the sediment, the survivability of these communities after renourishment is minimal (Dodge *et al.* 1974; Dodge and Vaisnys 1977; Marzalek 1981). The loss of primary production within the area of the fill placement eliminates an essential foraging resource for juvenile fish, turtles, and invertebrates.

The nearshore hard bottom reefs serve as settlement habitats for immigrating larvae of fish and invertebrates or as intermediate nursery habitats for juveniles emigrating out of nearby inlets (Vare 1991; Lindeman and Snyder 1999). At least eighty-six taxa of fish have been quantified among nearshore hard bottom habitats along southeast mainland Florida; including at least 34 species of juvenile reef fish which may utilize these habitats as nursery areas (Lindeman and Snyder 1999). Gilmore and Herrema (1981) recorded 107 species of fish from the littoral and sublittoral surf zone reef of central-east Florida. Peters (1984) found that in samples taken from the surf zones near Sebastian Inlet, a significantly higher abundance and diversity of fish were found adjacent to nearshore hard bottom habitats.

Green, hawksbill, leatherback, and loggerhead sea turtles are all known to utilize Broward County beach and nearshore habitats for nesting, foraging, and resting, and are protected by the NMFS and U.S. Fish and Wildlife Service under the Endangered Species Act of 1973. Environmental assessments completed for past beach renourishment projects have limited their discussion of sea

turtles to the impacts on nesting habitat (USACE 1987, 1994, & 1996). However, several studies have determined that nearshore hard bottom in Broward County are important as nursery habitat for juvenile green turtles and loggerheads (Wershoven 1987; Wershoven and Wershoven 1989; Guseman and Ehrhart 1990; Wershoven 1992). Carson (1999) found similarities in the quality and structural components of nearshore hard bottom reefs of Broward County to reefs in Palm Beach County that have a high density of sea turtles. These studies have concluded that juvenile and adult turtles feed upon the large biomass of macroalgae available in these hard bottom habitats.

Groin Construction Areas

In addition to the proposed renourishment, eleven groins are proposed for Segment III of the project at the John U. Lloyd State Recreation Area. The NMFS has concerns that these structures may pose hazards to nesting and hatching marine turtles that utilize these beaches. In addition, no information is provided on the effects that the proposed groin field could have on the downdrift shoreline. Specifically, the construction of groins may exacerbate shoreline erosion to the south.

The nearshore and offshore hard bottom and coral reef habitats are critical elements in maintaining viable fisheries in south Florida, and to some degree the entire southeastern United States. These nearshore hard bottom communities provide an important linkage between estuaries and offshore reefs for many commercially and recreationally important species. The cumulative effects of repeated burial of nearshore habitats, and the acute and chronic sedimentation and elevated turbidity resulting from the offshore dredging and beach fill are poorly understood. Ecosystem-scale effects could result from repeated, long-term burial of such a large amount of hard bottom habitat. Accordingly, it is the NMFS assessment that this project would seriously and adversely impact EFH and dependent fisheries which are important trust resources for the National Oceanic and Atmospheric Administration (NOAA). This assessment, however, is hampered in its detail because no description of the biological resources of the hard bottom and coral communities within and adjacent to the borrow areas, the pipeline corridors, the artificial reef (rock disposal) sites, or the nearshore hard bottom communities within and adjacent to the fill areas has been provided for the proposed project.

The mitigation strategies identified in the public notice do not assuage our concerns about adverse project impacts. NMFS is not aware of any conclusive information documenting the value of artificial reefs as compensation for impacts to nearshore reefs from beach renourishment. The monitoring of artificial reefs constructed as mitigation for the renourishment of Juno Beach (COE permit 199706559) is the only effort of which we are aware that would be of value in assessing mitigation strategies presented for the Broward County beaches. The results of studies of the Juno Beach artificial reefs and nearshore hard bottom reefs should be provided for our review. The results of the Juno Beach mitigation and control reefs surveys may assist in determining the appropriate scale and design for artificial reefs for the Broward County project.

In view of the adverse effects of this project on ARNI, EFH, and NOAA trust resources, the NMFS recommends that additional information including detailed maps of all hard bottom, hard and soft coral habitats be prepared and provided for NMFS review. At a minimum, mapping and assessment should encompass the following:

- a. inside the boundaries of the borrow areas and within a 500-foot radius of all borrow areas;
- b. the two artificial reef sites to be used for rubble disposal;
- c. within the equilibrium toe of fill for the area proposed for beach renourishment; and
- d. areas potentially impacted by pipe laying.

In addition, justification for the construction of the groin field in Segment III, and an evaluation of how the downdrift shoreline will be affected by the structures should be provided.

EFH Conservation Recommendations

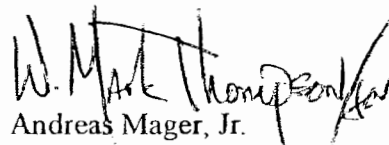
A permit for the proposed beach renourishment activity, as currently proposed, should not be issued. Alternatively, the proposal should be modified, based on the mapping information specified above. Modifications should include:

1. To protect hard bottom reefs, a 500-foot buffer zone around all borrow areas should be implemented. The borrow sites boundaries should be revised to eliminate acute angles and "dog-leg" features.
2. A plan should be developed and implemented to avoid and/or minimize damage by mechanical operations, siltation, turbidity and burial of all hard bottom areas and live corals habitats. This plan should be made available to NMFS for review prior to final approval.
3. A plan to fully compensate for unavoidable adverse impacts to hard bottom, coral and other sensitive nearshore habitats should be designed and should be made available to NMFS for review prior to final approval.

Please be advised that the MSFCMA and the regulation to implement the EFH provisions (50 CFR Section 600.920) require your office to provide a written response to this letter. That response must be provided within 30 days and at least 10 days prior to final agency action. A preliminary response is acceptable if final action cannot be completed within 30 days. Your final response must include a description of measures to be required to avoid, mitigate, or offset the adverse impacts of the activity. If your response is inconsistent with our EFH Conservation Recommendations, you must provide an explanation of the reasons for not implementing those recommendations.

If we can be of further assistance, please advise. Related comments, questions or correspondence should be directed to Michael R. Johnson in Miami. He may be contacted at 305-595-8352 or at the letterhead address above.

Sincerely,



Andreas Mager, Jr.
Assistant Regional Administrator
Habitat Conservation Division

cc:

COE, WPB

EPA, WPB & Marathon

FWS, Vero

DEP, Tallahassee & WPB

SAFMC, Charleston

FFWCC, Tallahassee

FSER4

FSER43-Johnson

FSER3

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Brice



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
9721 Executive Center Drive N.
St. Petersburg, Florida 33702
(727)570-5317; FAX 570-5300

JUL -6 2000

F/SER4:MT:sr

Colonel Joe R. Miller
District Engineer, Jacksonville District
Department of the Army, Corps of Engineers
Regulatory Division, South Permits Branch
P.O. Box 4970
Jacksonville, Florida 32232-0019

Dear Colonel Miller:

Please reference the public notice dated April 26, 2000, and our letter of June 26, 2000 (copy enclosed) regarding permit application number 199905545 (IP-DSG) submitted by Broward County, to perform work in waters of the Atlantic Ocean from Pompano Beach to Hallandale, Broward County, Florida. As specified in Part IV 3(a) of the 1992 404q Memorandum of Agreement (MOA) between our agencies, the enclosed letter advises that the activities specified in the public notice may adversely affect aquatic resources of national importance.

Pursuant to Part IV 3(b) of the MOA, I have reviewed the findings of my field staff, and I have determined that the proposed work will substantially and unacceptably impact nationally important aquatic resources. Therefore, I request that you fully consider the views and recommendations of the National Marine Fisheries Service in making your final decision. I also encourage continued efforts to resolve this matter at the field level and have requested that my field staff cooperate in any related effort.

Sincerely,

A handwritten signature in black ink, appearing to read "W. Hogarth".

William T. Hogarth, Ph.D.
Regional Administrator

Enclosure



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Office of the Secretary
Office of International Relations
Division of Elections
Division of Corporations
Division of Cultural Affairs
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Katherine Harris
Secretary of State
DIVISION OF HISTORICAL RESOURCES

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18 JUL 00
[Signature]

District Engineer
Jacksonville District Corps of Engineers
P.O. Box 4970
Jacksonville, Florida 32232-0019

July 11, 2000

RE: DHR No. 2000-05106
Permit Application No. 199905545 (IP-DSG)
Cultural Resource Review Request: *Broward County Beach Renourishment*

Dear District Engineer:

In accordance with the procedures contained in 36 C.F.R., Part 800 ("Protection of Historic Properties"), Florida's Coastal Zone Management Act, and implementing state regulations, we have reviewed the referenced projects for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places*, or otherwise of historical, architectural or archaeological value.

We have reviewed the information submitted by your office for the above referenced property and proposed project. Because of the rich maritime history of the Broward County area, it is the opinion of this office that a systematic remote sensing survey be conducted for the entire length of the project's proposed borrow areas.

This survey should utilize modern remote sensing technology to include magnetometer data, side-scan sonar data, and depth recorded capabilities. The remote sensing data should be real-time correlated with DGPS positioning data. The survey should be directed by an accredited nautical archaeologist with experience in the operation of remote sensing instrumentation and specific knowledge of maritime history. All anomalies determined to indicate a potential significant cultural resource should be ground-truthed by divers with specific training in underwater archaeological techniques. Results of this survey should be submitted to our office for final review prior to initiating bottom disturbing dredging activities.

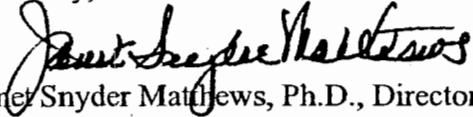
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<input type="checkbox"/> Director's Office (850) 488-1480 • FAX: 488-3355	<input type="checkbox"/> Archaeological Research (850) 487-2299 • FAX: 414-2207	<input checked="" type="checkbox"/> Historic Preservation (850) 487-2333 • FAX: 922-0496	<input type="checkbox"/> Historical Museums (850) 488-1484 • FAX: 921-2503
<input type="checkbox"/> Historic Pensacola Preservation Board (850) 595-5985 • FAX: 595-5989	<input type="checkbox"/> Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476	<input type="checkbox"/> St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044	<input type="checkbox"/> Tampa Regional Office (813) 272-3843 • FAX: 272-2340

District Engineer
July 11, 2000
Page 2

If you have any questions concerning our comments, please contact Brian Yates, Historic Sites Specialist, at (850) 487-2333 or 1-800-847-7278. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Janet Snyder Matthews". The signature is written in a cursive, flowing style.

Janet Snyder Matthews, Ph.D., Director
Division of Historical Resources
State Historic Preservation Officer

JSM/Yby

July 23, 2000

3835 Woods Walk Boulevard
Lake Worth, FL 33467

Diane Griffen
USACOE, Jacksonville District
400 West Bay Street
Jacksonville, FL 32232-0019

BRICE

Brice
Rec'd
28 JUL 00
CPY TO
RD-S +
RD-AM

Dear Ms. Griffen:

I am writing you in the hope that one more letter will make a difference. My concerns involve the beach re-nourishment projects (also known as Dredge and Fill projects) proposed for Broward, Palm Beach and Indian River Counties.

Two permits are now in Tallahassee pending approval, one for the "Midtown Beach" (plus extension) Permit No. 0164173-001 JJC for 1.4 million cubic yards of sand. The second is for "Phipps Ocean Park" (plus extension) Permit No. 0165332-001 JC for 1.5 million cubic yards of sand. The other dredge and fill projects are in Broward County (FDEP file no. 0163435-001-JC) and Indian River County (FDEP file no. 0166929-001-JC).

These projects will bury over 100 acres of irreplaceable coral reef and hardbottom and have a major negative environmental and economic impact on the community. This area is vital habitat for juvenile reef fish. The area of nearshore reefs out to 3 meters in depth in front of the Breakers Hotel is essential habitat for juvenile green turtles. It is clear from aerial sittings that 50% of all green turtles in Palm Beach County utilize a 4-kilometer stretch of these nearshore reefs. Over 500 species of fishes, invertebrates, and algae use the reefs that will be buried by these dredge projects.

As a SCUBA diver for the last 15 years, I can tell you that our reefs are in serious trouble. I have noticed a decline in the health of our reef system over this short time period. I recently did a beach dive at the Commercial Boulevard pier nearshore reef in Broward County. I was horrified to see the bleached white, dead coral. I know divers who would rather travel to other Caribbean dive sites because the reef systems are healthier than our own. This is resulting in a loss of tourist dollars. It takes nature hundreds of years to form a coral reef and only a one nearby dredge and fill project to destroy it. When the Midtown Beach was first nourished in 1995, 50% of the barrel sponges died because they are filter feeders.

Like the Florida Everglades, are we going to wait until the last possible minute to try to save Florida's reefs? Dredge and fill projects are just one of many negative cumulative activities that are killing our reefs. These projects must not be permitted. There must be alternatives to dredging in order to widen these beaches. Please consider the long-term effects of the action of dredging and the cumulative negative activities that are destroying our reef system.

Sincerely,



Diana M. Rivera, P.E.

**Department of Planning and Environmental Protection**

Biological Resources Division

218 S.W. 1st Avenue

Fort Lauderdale, FL 33301

(954) 519-1230 • Fax (954) 519-1412



April 11, 2001

Ms. Janet Snyder Matthews, Ph.D., Director
Florida Division of Historical Resources
500 South Bronough Street
Tallahassee, FL 32399-0250

Mr. Charles Stevens, P.E., Project Mgr.
Corps of Engineers, Jacksonville District
P.O. Box 4920
Jacksonville, FL 32232-0019

Subject: Broward County, Segments II and III, Shore Protection Project
State DHR Project File No. 996161

Dear Ms. Matthews and Mr. Stevens:

Enclosed is a report entitled, *Archaeological SCUBA/ROV Investigation of Fifteen Potentially Significant Submerged Archaeological Resources for the Broward County Shoreline Protection Project* by Bert Instruments, Inc. and Dr. John A Gifford. The fifteen magnetic anomalies are those previously uninvestigated objects located in or near the borrow sites proposed for the above-referenced project. The text report is accompanied by an electronic version of the report on CD and by four (4) CD's which contain video records of the investigations of the objects.

The report concludes that only one of the anomalies, No. 27 (bow section of the *Copenhagen*) is of cultural significance. This item, which is located outside of any borrow area, will be studiously avoided during the project.

It is our understanding that the results of this investigation and previous investigations conducted by and for Broward County meet the requirements of the State of Florida and the US Army Corps of Engineers with respect to cultural resource efforts for this shore protection project. We would appreciate a letter acknowledging that this is indeed the case.

Thank you for your consideration in this matter, and please do not hesitate to contact me at (954) 519-1265 if you have questions or need additional information.

Sincerely,



Stephen Higgins
Beach Erosion Administrator

enclosures

c: Eric Myers, Director, Biological Resources Division (letter only)
Doug Mann, Coastal Planning & Engineering, Inc.
Chris Creed, Olsen Associates

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FLORIDA DEPARTMENT OF STATE

Katherine Harris

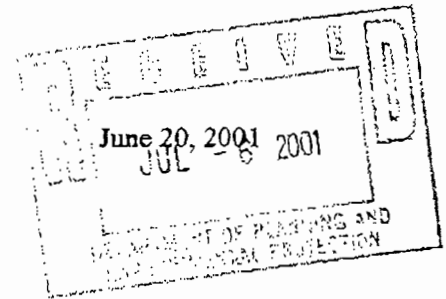
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Department of Veterans' Affairs

Mr. Stephen Higgins
Broward County Dept. of Planning and Environmental Protection
Biological Resources Division
218 S.W. 1st Avenue
Fort Lauderdale, Florida 33301



RE: DHR No. 2001-3987

Date Received by DHR: April 13, 2001

Agency: United States Army Corps of Engineers

Project Name: *Archaeological SCUBA/ ROV Investigation of Fifteen Potentially
Significant Submerged Archaeological Resources for the Broward
County Shoreline Protection Project*

Broward County, Florida

Dear Mr. Higgins:

Our office has received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*. The State Historic Preservation Officer (SHPO) is to advise and assist federal agencies when identifying historic properties (listed or eligible for listing, in the National Register of Historic Places), assessing effects upon them, and considering alternatives to avoid or reduce the project's effect on them.

Results of the survey indicate that thirteen (13) of the fifteen (15) magnetic anomalies were investigated for the project were identified as modern debris. Two of the anomalies (A22 and A26) were identified as relatively large anchors of probable post-1950 vintage. Four anomalies (A21, A23, A24, and A25) were identified as modern wire rope cable. Two Anomalies (A8 and A14) were identified as large modern metal objects, one resembling a pontoon and one a steel tube. The remaining five anomalies are modern debris described as "small and innocuous."

Finally, anomaly A27 was identified as the bow section of the S.S. Copenhagen, and anomaly A9 could not be identified. It is the recommendation of this agency that three of the anomalies (A9, A22, and A26) be avoided by establishing a 100-foot buffer around the anomalies. Anomaly A27 should be avoided by establishing a 1500-foot buffer around the center of the vessel, recorded as 26° 12.343' N/ 080° 05.108' W and a 1500-foot buffer around the disarticulated bow section of the vessel located at 26° 11.988' N/ 080 04.977' W.

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(850) 488-1484 • FAX: 921-2503

☐ Historic Pensacola Preservation Board

(850) 595-5985 • FAX: 595-5989

☐ Palm Beach Regional Office

(561) 279-1475 • FAX: 279-1476

☐ St. Augustine Regional Office

(904) 825-5045 • FAX: 825-5044

☐ Tampa Regional Office

(813) 272-3843 • FAX: 272-2340

Mr. Stephen Higgins
June 20, 2001
Page 2

If you have any questions concerning our comments, please contact Brian Yates, Historic Sites Specialist, at byates@mail.dos.state.fl.us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Janet Snyder Matthews". The signature is written in a cursive, flowing style.

Janet Snyder Matthews, Ph.D., Director
Division of Historical Resources
State Historic Preservation Officer

JSM/Yby
Enclosure (1)

**Department of Planning and Environmental Protection**

Biological Resources Division

218 S.W. 1st Avenue

Fort Lauderdale, FL 33301

(954) 519-1230 • Fax (954) 519-1412

July 23, 2001

Ms. Janet Snyder Matthews, Ph.D., Director
Florida Department of State
Division of Historical Resources
500 South Bronough Street
Tallahassee, FL 32399-0250

Subject: DHR No. 2001-3987
Broward County Shoreline Protection Project

Dear Dr. Matthews:

Thank you for your letter dated June 20, 2001 containing recommendations regarding protection of the anomalies identified in the County study entitled *Archaeological SCUBA/ROV Investigation of Fifteen Potentially Significant Submerged Archaeological Resources for the Broward County Shoreline Protection Project*.

We generally concur with your recommendations; however, we would like to respectfully request a modification to one of them. In your letter you recommend that a 1500 foot buffer be established and maintained around Anomaly A27, which is identified as the bow section of the *Copenhagen*. This anomaly is located approximately 300 feet north of one of the proposed borrow sites for our beach nourishment project. Attached are three figures which illustrate our beach fill areas (Figure 1), the seven borrow areas to be used for the project (Figure 2), and the relative locations of the *Copenhagen* Preserve, the bow of the *Copenhagen*, and nearby proposed borrow areas (Figure 3). Note that Figure 3 also shows the locations of two previously excavated borrow areas in the vicinity of the anomaly.

As shown in Figure 3, the 1500 foot buffer around the anomaly would preclude the use of most of Borrow Area VI, which contains approximately 300,000 cubic yards of very high quality sand. Loss of use of this material would jeopardize our ability to construct a portion of our shore protection project. We had known about the existence of the *Copenhagen* bow for some time, but we were not concerned with its proximity to this borrow site because, based on our experience and considering our monitoring programs as outlined below, we know that we can utilize this borrow area while ensuring that no harm comes to this historical feature.

When the County investigates borrow areas for use in beach nourishment projects, we are extraordinarily sensitive to their locations relative to hardbottom communities and coral reefs and to other significant features, including artificial reefs and cultural resources, and we precisely map these resources for future monitoring. During construction, the dredging contractor is required to employ the most advanced navigation systems available in order to not stray from the allowable dredging areas. The County conducts intensive monitoring of the dredging activity, including water quality monitoring, continuous electronic updates on the dredge's position, and daily checks on marker buoy positions, reef health, pipeline integrity, and other resource-related items and

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activities. We also plan to monitor nearby reefs and other resources, including the bow of the *Copenhagen*, for sedimentation, siltation and physical impacts from the project. These monitoring programs begin prior to project construction (they have already begun in preparation for an August, 2002 construction start) and continue for several years after the project is completed. If actual or potential problems are detected, the project will be halted until procedures are implemented to preclude the possibility of impacts. It is always our intent to prevent problems before they occur.


The County has successfully constructed, with no significant adverse impacts, seven beach nourishment projects in the last twenty-five years, excavating from offshore and placing onto the beach over eight million cubic yards of sand along some twelve miles of beach. We are able to ensure the protection of our natural and cultural resources because Broward County designs, constructs, and pays for our beach projects with subsequent reimbursement of the Federal and State shares of the costs. This local construction authority allows Broward County to be more sensitive to local concerns and conditions than the US Army Corps of Engineers can be. The result is dredging and beach construction and the protection of our natural and cultural resources.

Broward County has also demonstrated a commitment to identifying and protecting our offshore cultural resources apart from our beach programs. We were partners with your agency in accomplishing the designation of the *Copenhagen* Underwater Archaeological Preserve, and with our private partners we are dedicated to its maintenance. Dr. Roger Smith of your staff was particularly instrumental in the preservation of this site. Additionally, the County has on several occasions employed expert consultants to perform cultural resource investigations offshore, and we work with our own Broward County Marine Archaeological Council to investigate and document potentially significant marine historical resources.

Inasmuch as it has been demonstrated through Broward County's previous beach nourishment projects that dredging can occur within 200 feet of our coral reefs and cultural resources without adverse impacts we respectfully request that a 300 foot buffer be established and maintained around Anomaly A27. We believe that our detailed and dedicated monitoring program, combined with our experience and expertise regarding our precious offshore resources, demonstrate our ability to protect this historical feature.

We appreciate your consideration of this request, and please do not hesitate to contact me at the above address or by phone at 954-519-1265 if you have questions or comments.

Sincerely,



Stephen Higgins
Beach Erosion Administrator

attachments

c: Eric Myers, Director, Biological Resources Division
Doug Mann, Coastal Planning & Engineering, Inc.
Chris Creed, Olsen Associates, Inc.
Linda Shelley, Fowler, White
Roger Smith, Division of Historical Resources